

Green tonic

FORTIFIANTS NATURELS

- Phosphobacteria

Silica based, water dispersible carrier formulation

Phosphorus is one of the vital elements required for crop growth. Only 20 to 30% of the inorganic phosphatic fertilizers applied are available to plants while rest is lost due to leaching and by chemical fixation in the soil. Over the years, in areas of high fertilizer use, this chemically fixed phosphorus has accumulated in the soil as insoluble phosphates of calcium, iron and aluminium. Plants cannot absorb these phosphates present in insoluble forms in the soil. However, some beneficial bacteria like *Bacillus megaterium* var. *phosphaticum* is capable of solubilising these chemically fixed insoluble phosphates and make them biologically available to plants. This also helps to reduce the usage of chemical phosphatic fertilizers greatly.

MODE OF ACTION

The dormant forms of *Bacillus megaterium* var. *phosphaticum* cells on reaching the soil gets activated and produces fresh batch of active cells. These cells grow and multiply by utilizing the carbon source in the soil or from root exudates. During their growth, they solubilise the fixed phosphorus in the soil and make it available in the plant in an easily usable form.

Features

Phosphobacteria is a carrier based formulation containing strain of *Bacillus megaterium* var. *phosphaticum*. These bacteria in its dormant form are suspended in carrier formulation @ 1×10^{12} cells per g of the product.

Benefits

- Encourages early root development
- PSB produced organic acid like succinic acid, which hastens the maturity and there by increases the ratio of grain and yield
- Compatible with other beneficial microbes in the rhizosphere
- Stimulates formation of fats, convertible starches and healthy seeds
- Helps rapid cell development in plants.

RECOMMENDATION FOR USE:

Fertigation Tank	250 gms of microbial consortia in 60lts of water and apply through fertigation tank for one acre.
Soil application	Mix 250-500 gms with 10 kg of FYM and apply basally as soil application.
Seedling root dipping	Dissolve 250 gms in 100 lts of water and dip the seedlings.
Foliar application	Mix 250 gms in 100 lts of water Mix 250-500 gms of phosphobacteria and for 1 kg of seeds for seed treatment

SPECIFICATION

Base	:	Silica based, water dispersible carrier formulation
Viable cell count	:	CFU minimum 10^{12} cell/g for carrier material.
PH	:	6.5 – 7.5
Particle size in case for Silica carrier based material	:	All material shall pass through 0.15- 0.212 mm IS Sieve

MATERIAL SAFETY DATA SHEET 1/2

Section	Category	Details
Section - 1	Processed & Packed by	Ecots Bio Products [P] Ltd 90A, Sethumadi Rd, Vettaikaranpudur, Coimbatore, India 642129
Section - 2	Mfg License No	PR-173/RS-CBE/2008-2011
Section - 3	Composition	<i>Phosphobacteria</i> and Dispersible powder
Section - 4	First aid measures	Eyes : Mildly irritating to eyes. Skin : Mildly irritating to skin. Frequent and prolonged contact may cause dermatitis. No effect should occur, If promptly washed off. Inhalation : If present as high concentration of air borne dust prolonged contact may cause irritation to nose and throat, May cause coughing and shortness of breath. Ingestion : May cause diarrhea, Nausea, Vomiting and cramps, weakness and circulatory problems.
Section - 5	Measures & fighting against fire	Fire extinguishing media :CO ₂ , Dry chemicals
Section – 6	Measures in case of leak or unforeseen release	1. Remove persons not wearing protective clothing from spill area. 2. Contain and ventilate spill area 3. Avoid contamination of stream and sewers 4. Absorb on to clay, absorbent material.
Section - 7	Storage and handling	Handling : Avoid dropping the container from the top. Storage : Store in a well ventilated place. Keep can closed when not in use. Away from food, direct sunlight . Away from high temperature
Section - 8	Exposure control and personal protection	Not applicable
Section -9	Physical and chemical properties	Nature : White Powdery Odour : Characteristic odour Solubility in Water : Dispersible in water Boiling Point : Not applicable Melting point : Not applicable
Section -10	Stability and reactivity	Not applicable
Section -11	Toxicological information	Non Toxic and Non - Virulent
Section -12	Ecological information	Empty containers : Not Applicable Waste Disposal Method : Not Applicable
Section -13	Elimination considerations	Not Applicable

MATERIAL SAFETY DATA SHEET 2/2

Section -14	Transport information	Shipping Name : Phosphobacteria Shipping containers Marking : Phosphobacteria Shipping Containers Lables : Phosphobacteria Flammability : Not Flammable
Section -15	Regulations information	Designation : Eco- friendly Origin : Non Hazardous Material
Section -16	Protection information	<ul style="list-style-type: none"> • Chemical safety goggles. • Use protective clothing, gloves and mask. • Mechanical exhaust required. • Safety shower and Eye bath. • Avoid contact with eyes. • Wash thoroughly after handling. • Keep Tightly closed. Store in a cool dry place.
Section -17	Emergency and first aid procedure	<ul style="list-style-type: none"> • In case of Contact, immediately flush eyes or skin with copious amount of water for atleast 15 min while removing contaminated clothing and shoes. • If Inhaled, Move to fresh air, If not breathing give artificial respiration. If breathing is difficult give oxygen. • If swallowed, Wash mouth with water, provided person is conscious.
Section -18	Handling and storage conditions	Normal House Keeping Procedures
Section -19	Spill or leak procedures special	Not Applicable
Section -20	USE	Agriculture purpose

